Development Methodology for a "Next Generation" Medical Informatics Curriculum for Clinicians

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We describe a new methodology for development of a medical informatics curriculum for practicing clinicians. The curriculum is based on a biaxial framework in which information is categorized by type of application and role of the learner in relation to the application. The curriculum development process incorporates feedback from practicing clinicians on an ongoing basis.

The Oregon Health and Science University (OSHU) holds an annual continuing medical education (CME) course on medical informatics for practicing clinicians. This course has focused on basic use of computers, the Internet, and information retrieval applications for the medical literature. In recent years, course participants have moved beyond a need to master basic computer applications and shown increasing interest in clinical computer applications. We describe herein our plan to meet these evolving needs through a comprehensive curricular redesign.

We chose a bi-axial framework for organizing the course content. One of the conceptual axes corresponds to the types of applications available for use in clinical settings; the other corresponds to the role of the learner vis-à-vis that application. We chose to organize our curriculum around application categories because most software used by clinicians in their practices will be commercially developed, rather than custom-designed. Therefore, familiarity with the types of applications that are commercially available is critical for these learners to successfully "computerize" their practices. We grouped medical computer applications into the following categories:

- Electronic medical record systems
- Decision-support applications
- Medical knowledge resources for clinicians
- Consumer health informatics applications
- Telemedicine applications
- Practice management applications

We recognize that it is more common to organize medical informatics curricula around theoretical concepts[1], but we expect our approach may be more relevant to the "real world" needs of our audience.

The "role of user" axis addresses our audience's diversity in knowledge and experience. We identified three roles around which to organize our content:

- Deciding whether and how to use a particular type of application
- Selecting an application from the available options
- Implementing an application (including initial implementation and "post-go-live" management)

By choosing "role of user" rather than "level of knowledge" we avoid arbitrary and ambiguous classifications of content such as "intermediate," "advanced," etc. We anticipate this will help our audience select learning modules that closely match their needs.

For each type of application, we composed learning objectives for each user role listed above. This matrix of learning objectives will guide the development of curricular materials. We are incorporating feedback on an ongoing basis from a volunteer group of practicing clinicians, none of who have formal training or extensive experience in medical informatics.

A recent conference on informatics education urged a "focus on information rather than technology"[2]. By focusing on application type, we have chosen a third way that we feel best meets the needs of our audience. However, we recognize the importance of teaching the abstract concepts that underlie clinical computer applications and intend to incorporate them into the discussion of each type of application.

References

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2. Staggers N, Gassert CA, Skiba DJ. Health professionals' views of informatics education: Findings from the AMIA 1999 Spring Conference. J Am Med Inform Assoc. 2000(7):550-558.